भारतीय मानक
Indian Standard

IS 16707 : 2018

कार्बोसल्फान ग्रैन्यूल — विशिष्टि

Carbosulfan Granules — Specification

ICS 65.100.30

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Pesticides Sectional Committee, FAD 1

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Pesticides Sectional Committee had been approved by the Food and Agriculture Division Council.

Carbosulfan granules are generally used in insecticidal formulations.

Carbosulfan granules are generally manufactured to contain 6 percent (*m/m*) of Carbosulfan.

In the preparation of this standard, due consideration has been given to the provisions of *Insecticides Act*, 1968 and the Rules framed thereunder. However, this standard is subject to the restrictions imposed under the *Insecticides Act* and Rules, wherever applicable.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 ‘Rules for rounding off numerical values (*revised*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

CARBOSULFAN GRANULES — SPECIFICATION

1 SCOPE

This standard prescribes the requirements and methods of sampling and test for Carbosulfan granules.

2 REFERENCES

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

IS No.	*Title*
460 (Part 1) : 1985	Specification for test sieves: Part 1 Wire cloth test sieves (*third revision*)
1070 : 1992	Reagent grade water — Specification (*third revision*)
6940 : 1982	Method of tests for pesticides and their formulations (*firstrevision*)
8190 (Part 1) : 1988	Requirements for packing of pesticides: Part 1 Solid pesticides (*second revision*)
10627 : 1983	Methods for sampling of pesticidal formulations
14940 : 2001	Carbosulfan technical — Specification

3 REQUIREMENTS

3.1 Constituents

3.1.1 The material shall consist of Carbosulfan impregnated on a suitable carrier together with binder(s), stabilizer(s) and/or other formulants.

3.1.2 Carbosulfan technical, employed in the formulation of this material, shall conform to IS 14940.

3.2 Physical

The material shall comply with the physical requirements specified in **3.2.1** to **3.2.5**.

3.2.1 *Description*

The material shall be in the form of dry free flowing granules free from visible extraneous matter. It may contain added colouring matter.

3.2.2 *Sieving Requirement*

Not less than 97 percent by mass of the material shall pass through a test sieve having mesh size of the upper declared limit and not more than 5 percent by mass of the material shall pass through a test sieve having mesh size of lower declared limit, when determined by the method described in **12.1** of IS 6940.

3.2.2.1 The ratio of lower to upper sieve sizes declared under **3.2.2** shall not exceed 1 : 3.

3.2.3 *Dust*

When tested by the method prescribed in **12.1** of IS 6940, not more than 1 percent by mass of the material shall pass through 75-micron IS Sieve [*see* IS 460 (Part 1)]. The material retained on the sieve shall also comply with the requirements of **3.3.1**.

3.2.4 *Encapsulation*

3.2.4.1 *Attrition test*

When the material is subjected to the attrition test as prescribed in Annex A, the material passing through the sieve shall not contain more than 2 percent by mass of declared nominal active ingredient.

3.2.4.2 *Water run-off test*

When the material is subjected to the water run-off test as described in Annex B, the active ingredient in the water shall not exceed 5 percent by mass of the declared nominal active ingredient.

3.2.5 *Moisture Content*

When tested by the method prescribed in **4** of IS 6940, the moisture content of the material shall not exceed 4 percent by mass.

3.3 Chemical

The material shall comply with the following chemical requirements:

3.3.1 *Carbosulfan Content*

When determined by the method prescribed in Annex A of IS 14940, the observed Carbosulfan content percent (*m/m*) of any of the samples shall not differ from the declared nominal value by more that tolerance limits indicated below:

Nominal Value, Percent	*Tolerance Limits,* Percent of the Nominal Value
Up to 9	+ 10 – 5
Above 9 and below 50	± 5
50 and above	+ 5 – 3

3.3.1.1 The actual value of Carbosulfan content in the formulation shall be calculated to the second decimal place and then rounded off to first decimal place before applying the tolerances given in **3.3.1**.

3.3.2 *Acidity*

When determined by the method prescribed in **13.5.2** of IS 6940, the acidity (as H_2SO_4) shall not be more than 0.5 percent (*m/m*).

4 PACKING

The material shall be packed in clean and dry trilaminated pouches with LDPE liner and LDPE lined HDPE woven sacks. Closures provided shall be such as not to allow any materials to leak through them. These shall be leak proof and pilfer proof. All the containers shall also comply with the general requirements as stipulated in IS 8190 (Part 1).

5 MARKING

5.1 The containers shall be securely closed and shall bear legibly and indelibly the following information in addition to any other information as required under the *Insecticides Act*, 1968 and Rules framed thereunder:

a) Name of the material;
b) Name and address of the manufacturer;
c) Batch number;
d) Date of manufacture;
e) Date of expiry;
f) Net quantity;
g) Nominal Carbosulfan content, percent (*m/m*);
h) Cautionary notice as worded in the *Insecticides Act*, 1968, and Rules framed thereunder; and
j) Any other information required under the *Legal Metrology (Packaged Commodities) Rules,* 2011.

5.2 BIS Certification Marking

The product may also be marked with the Standard Mark.

5.2.1 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 2016 and the Rules and Regulations made thereunder. The details of conditions under which the license for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

6 SAMPLING

6.1 When freshly manufactured material in bulk quantity and/or the retail pack of the formulated product is/or offered for inspection, representative sample of the materials shall be drawn as prescribed in IS 10627 and if tested within 90 days of its date of manufacture, the criteria for conformity shall be the contents in percent (*m/m*), shall not be less than the declared nominal value. The upper limit for conformity shall be the same as those given in **3.3.1** of this standard.

6.2 When the material is offered for inspection after 90 days of its manufacture, sampling shall be done as prescribed in IS 10627, however, the criteria for conformity of the material, when tested, shall be the limits of tolerances, as applicable over the declared nominal value as given under **3.3.1** of this standard.

7 TESTS

7.1 Tests shall be carried out as prescribed in **3.2** and **3.3**.

7.2 Quality of Reagents

Unless specified otherwise, pure chemicals and reagent grade water (*see* IS 1070) shall be employed in the tests.

NOTE — 'Pure chemicals' shall mean chemicals that do not contain impurities which affect the results of analysis.

ANNEX A

(*Clause* 3.2.4.1)

METHOD FOR ATTRITION TEST

A-1 Take 100 g of the material and sieve it for 2 h in 75-micron IS sieve [*see* IS 460 (Part 1)] in a ro-tap machine.

A-2 Collect the remnants and determine its active ingredient as described in **3.3.1**.

ANNEX B

(*Clause* 3.2.4.2)

METHOD FOR WATER RUN-OFF TEST

B-1 Take 10 g of the material in a 100 ml capacity burette plugged with cotton/glass wool at the bottom and add 50 ml water. Keep it for 15 min. Drain off the water after 15 min.

B-2 Determine active ingredient in the drained water so collected (*see* **B-1**) by the method described in **3.3.1**.

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Amendments Issued Since Publication

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